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REMARKS

In the Office Action, it is noted that claims 17-44 are pending in the application of which claims 17-44 are rejected. The Examiner in his "Response to Amendment" notes that claims 1-16 have been canceled when, in fact, they were withdrawn. By this amendment claims 17 and 30 are amended, claims 23 and 37 are canceled, and claims 18-22, 24-29, 31-36, and 38-44 continue unamended. In view of both the amendments presented above and the following discussion, the Applicant submits that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103. Thus, the Applicant believes that all of these claims are now in allowable form.

It is to be understood that the applicant, by amending the claims, does not acquiesce to the Examiner's characterizations of the art of record or to applicant's subject matter recited in the pending claims. Further, applicant is not acquiescing to the Examiner's statements as to the applicability of the prior art of record to the pending claims by filing the instant responsive amendments.

REJECTIONS

Rejection of Claims Under 35 U.S.C. §103(a)

A. Claims 17-19 and 30-31

The Examiner has rejected claims 17-19 and 30-31 under 35 U.S.C. §103(a) as being unpatentable over Ravi et al. (U.S. Patent No. 6,292,834, issued September 18, 2001, hereinafter "Ravi"). The applicant respectfully traverses the rejection.

The applicant has amended independent claim 17 (and similarly independent claim 30) to recite additional features that the applicant considers as inventive. In particular, independent claim 17 (and similarly independent claim 30), as amended, recites:

"In a video-on-demand (VOD) distribution system comprising provider equipment and subscriber equipment, said provider equipment providing VOD content to said subscriber equipment via a forward channel, said subscriber equipment requesting said VOD content via a back channel, a method comprising the steps of:

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determining whether said VOD distribution system has sufficient bandwidth available to provide VOD content requested by a subscriber; providing, in the event of appropriate bandwidth availability, said requested VOD content to said subscriber using stored content encoded in a manner adapted to utilize said appropriate bandwidth; and providing, in the event of minimum bandwidth availability, said requested VOD content to said subscriber using stored content encoded in a manner adapted to utilize minimum bandwidth. (emphasis added).

The test under 35 U.S.C. §103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious; rather the test is whether the claimed invention, considered as a whole, would have been obvious. Jones v. Hardy, 110 U.S.P.Q. 1021, 1024 (Fed. Cir. 1984) (emphasis added). The Ravi reference fails to teach or suggest the applicant's invention as a whole.

In particular, Ravi discloses that performance variables are computed and the computed performance variables are used to determine if it is desirable to decrease bandwidth. If so, the bandwidth is decreased, otherwise the bandwidth decrease is not desirable and the performance variables are used to determine if it is desirable to increase the bandwidth. If a bandwidth increase is desirable, then the bandwidth is increased (see Ravi, column 7, lines 16-26, Figs. 4 and 5a through 5e). Nowhere in the Ravi reference is there any teaching or suggestion of providing, in the event of appropriate bandwidth availability, "said requested VOD content to the subscriber using stored content encoded in a manner adapted to utilize the appropriate bandwidth" or "the minimum bandwidth."

Support for the applicant's invention as claimed is shown and discussed with respect to applicant's Fig. 1 and 2 and the specification on page 5, lines 8-22. Specifically, "Referring to FIG. 1, the data storage unit 114-1 is depicted as storing appropriate bandwidth programs 114-1A and minimal bandwidth programs 114-1M. Appropriate bandwidth programs 114-1A comprise those programs, such as audio-visual programs, than have been encoded utilizing a bit budget that is appropriate to the program in terms of visual or aural encoding quality. For example, a high definition program that has been encoded to provide sufficient information such that a high quality presentation of the high definition program may be provided via the subscriber

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equipment. By contrast, minimal bandwidth programs 114-1M comprise those programs, such as audio-visual programs, than have been encoded utilizing a bit budget representing a minimal level in terms of visual or aural encoding quality. For example, a high definition program that has been encoded to provide sufficient information such that only a standard quality presentation of the high definition program may be provided via the subscriber equipment."

The Ravi reference is completely silent with regard to using stored content encoded in a manner adapted to utilize the appropriate bandwidth, or in the event of minimum bandwidth availability, using stored content encoded in a manner adapted to utilize minimum bandwidth. Rather, The Ravi reference merely discloses that the content is stored in a storage device, such as hard disk drive 110 of computer system 100 of FIG. 1. Computer system 100, as illustratively shown in FIG. 1 of the Ravi reference, represents an exemplary computer system in which components of the VOD system, such as the production station 210, a stream server 220, at least one web server 230, and at least one client computer 240 may be implemented. However, nowhere in the Ravi reference is there any teaching or suggestion that Ravi's versions of the video content may be stored, where the first version of the stored content is stored as encoded content in a manner adapted to utilize an appropriate bandwidth, and a second version of encoded content, which is stored in the manner adapted utilize minimum bandwidth. By contrast, the Ravi reference merely discloses that the transmission rate of content may be dynamically decreased or increased by changing the transmission rate from the server to the client computer in response to the measurement of a number of data packets currently in a playout buffer of the client device going below or rising above a predetermined threshold.

Specifically, the transmission rate of the data stream is dynamically adjusted in response to changes in the bandwidth made available by the computer network 290 for the network connection between server 220 and client computer 240. Accordingly, server 220, in response to feedback from client computer 240, dynamically selects transmission rates in order to better match the varying bandwidth capacity of the network connection (see, Ravi, col. 6, lines 37-43). The Ravi reference fails to teach or even suggest "providing an event of the appropriate bandwidth availability, said

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requested VOD content to said subscriber using stored content encoded in a manner adapted to utilize said appropriate bandwidth, and providing in the event of minimum bandwidth availability, said requested VOD content to said subscriber using stored content encoded in a manner adapted to utilize minimum bandwidth, the Ravi reference fails to teach or suggest the applicant's invention as a whole.

As such, the applicant submits that independent claim 17 is not obvious and fully satisfies the requirements under 35 U.S.C. §103 and is patentable thereunder. Likewise, independent claim 30 recites similar features as recited in independent claim 17. As such, the applicant submits that independent claim 30 is not obvious and fully satisfies the requirements under 35 U.S.C. §103 and is patentable thereunder. Furthermore, claims 18, 19 and 31 respectively depend from independent claims 17 and 30 and recite additional features thereof. As such, and at least for the same reasons as discussed above, the applicant submits that these dependent claims are also not obvious and fully satisfy the requirements under 35 U.S.C. §103 and is patentable thereunder. Therefore, the applicant respectfully requests that the rejection be withdrawn.

B. Claims 20-24, 26-28, 32-38, 40-42, and 44

The Examiner has rejected claims 20-24, 26-28, 32-38, 40-42, and 44 as being obvious under 35 U.S.C. §103 over Ravi in view of Brown (U.S. Patent No. 5,822,530, issued October 13, 1998, hereinafter "Brown"). The applicant respectfully traverses the rejection.

Claims 20-24, 26-28, 32-38, 40-42, and 44 respectively depend, either directly or indirectly, from independent claims 17 and 30 and recite additional features thereof. For example, independent claim 20 recites in part:

"In a video-on-demand (VOD) distribution system comprising provider equipment and subscriber equipment, said provider equipment providing VOD content to said subscriber equipment via a forward channel, said subscriber equipment requesting said VOD content via a back channel, a method comprising the steps of:

determining whether said VOD distribution system has sufficient bandwidth available to provide VOD content requested by a subscriber;

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providing, in the event of appropriate bandwidth availability, said requested VOD content to said subscriber using content encoded in a manner adapted to utilize said appropriate bandwidth;
providing, in the event of minimum bandwidth availability, said requested VOD content to said subscriber using content encoded in a manner adapted to utilize minimum bandwidth.

The combination of Ravi and Brown fails to teach or suggest the applicant's invention as a whole. In particular, the combination of Ravi and Brown fail to teach or suggest a limitation "providing, in the event of appropriate bandwidth availability, said requested VOD content to said subscriber using stored content encoded in a manner adapted to utilize said appropriate bandwidth," and "providing in the event of minimum bandwidth availability, said requested VOD content to said subscriber using stored content encoded in a manner adapted to utilize said minimum bandwidth."

As discussed above, the Ravi reference merely discloses that performance variables are computed and the computer performance variables are used to determine if it is desirable to decrease bandwidth. If so, the bandwidth is decreased, otherwise the bandwidth decrease is not desirable then the performance variables are used to determine if it is desirable to increase the bandwidth. If a bandwidth increase is desirable, then the bandwidth is increased (see Ravi, column 7, lines 16-26, Figs. 4 and 5a through 5e). Nowhere in the Ravi reference is there any teaching or suggestion of providing, in the event of appropriate bandwidth availability, "said requested VOD content to the subscriber using stored content encoded in a manner adapted to utilize said appropriate bandwidth." That is, the Ravi reference is silent with respect to how the content is stored. More specifically, Ravi is completely devoid of my teaching or suggestion that the content is stored (1) in a manner adapted to utilize the appropriate bandwidth, and (2) in a manner adapted to utilize a minimum bandwidth.

Furthermore, the Brown reference fails to bridge the substantial gap as between the Ravi reference and the applicant's invention. In particular, the Brown reference merely discloses determining if the transmission of a VOD version of a requested application would constrain the shared resources of the interactive communications system. The Brown reference makes this determination by utilizing a mathematical expression to determine the available capacity of the system. (See Brown, column 3,

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lines 26-39.) The Brown reference fails to teach or suggest providing, in the event of appropriate bandwidth availability, the requested VOD content to the subscriber using stored content encoded in a manner adapted to utilize said appropriate bandwidth, and providing, in the event of minimum bandwidth availability, the requested VOD content to the subscriber using stored content encoded in a manner adapted to utilize the minimum bandwidth. By contrast, Brown discloses that the requested VOD version of the content is provided to the subscriber if the transmission of the requested VOD version would not constrain resources of the system. On the other hand, if the system's resources would be constrained by the submission of the requested VOD version, then one embodiment of the invention (1) denies the request for this presentation, and (2) directs the requesting viewer to view a near video-on-demand (NVOD) version of the particular application. (See Brown, column 3, line 63 to column 4, line 4).

In other words, the applicant's invention provides video-on-demand content previously encoded at an appropriate bandwidth at the provider equipment to the subscribers in the event of appropriate bandwidth availability, as well content previously encoded at a minimum bandwidth level in the event of minimum bandwidth availability. By contrast, the Brown reference provides VOD content to the subscriber only in the case where appropriate bandwidth is available. In instances where minimum bandwidth availability is limited, the Brown reference teaches away from the applicant's invention, since the system of Brown merely provides a near video-on-demand version of a particular application. In NVOD programming, the interactive entertainment system broadcasts several time-shifted versions of interactive application (i.e., broadcasts duplicate versions of the application, with the starting time of each version offset by a unique, predetermined time increment) to all of its subscribers over shared communication paths. Typically, interactive systems utilize NVOD servers to provide several presentations of a movie, where the presentation start-times are staggered so that no two presentations start at the same time (see Brown, col. 2, lines 12-22). This is completely different from the applicant's invention, since the applicant's invention is able to provide video-on-demand content in instances where there is also minimum bandwidth availability.

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Even if the two references could somehow be operably combined, the combination would merely disclose computing performance variables to determine if it is desirable to decrease or increase bandwidth, if the system resources are not constrained providing VOD content, and if the system resources are constrained either denying the request or directing the requesting viewer to view near-video-on-demand (NVOD) versions of the content. That is, a subscriber is limited to receiving NVOD content, as opposed to received VOD content in the event of minimum bandwidth availability. Since the combination fails to teach or suggest "providing, in the event of appropriate bandwidth availability, said requested VOD content to said subscriber using stored content encoded in a manner adapted to utilize said appropriate bandwidth; and providing, in the event of minimum bandwidth availability, said requested VOD content to said subscriber using stored content encoded in a manner adapted to utilize said minimum bandwidth," the combination fails to teach the applicant's invention as a whole.

As such, the applicant submits that dependent claim 20 is not obvious and fully satisfies the requirements under 35 U.S.C. §103 and is patentable thereunder. Furthermore, claims 21, 22, 24, 26-28, 32-36, 38, 40-42 and 44 respectively depend, either directly or indirectly, from independent claims 17 and 30 and recite additional features thereof. As such, and for at least the same reasons as discussed above, the applicant submits that these dependent claims are also not obvious and fully satisfy the requirements under 35 U.S.C. §103 and are patentable thereunder. Therefore, the applicant respectfully requests that the rejections be withdrawn.

C. Claims 25, 29, 39 and 43

The Examiner has rejected claims 25, 29, 39, and 43 as being obvious under 35 U.S.C. §103 as being obvious over Ravi in view of Brown and in further view of Hang (U.S. Patent No. 5,115,309, issued May 19, 1992, hereinafter "Hang"). The applicant respectfully traverses the rejection.

As discussed above, the Ravi reference merely discloses that performance variables are computed and the computed performance variables are used to determine if it is desirable to decrease bandwidth. If so, the bandwidth is decreased, otherwise the

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bandwidth decrease is not desirable then the performance variables are used to determine if it is desirable to increase the bandwidth. If a bandwidth increase is desirable, then the bandwidth is increased (see Ravi, column 7, lines 16-26, Figs. 4 and 5a through 5e). Nowhere in the Ravi reference is there any teaching or suggestion of providing, in the event of appropriate bandwidth availability, "said requested VOD content to the subscriber using stored content encoded in a manner adapted to utilize said appropriate bandwidth."

Additionally, the combination of Brown and Hang do not teach or suggest the invention of claims 25, 29, 39, and 43. Claims 25 and 29 respectively depend from independent claim 17, as amended, and recite additional limitations thereof. Furthermore, claims 39 and 43 depend from independent claim 30 and recite additional limitations thereof. As discussed above, the Brown reference fails to teach or suggest the applicant's invention as a whole. Specifically, Brown merely discloses an interactive information distribution system that provides VOD content in instances where appropriate bandwidth and provides near video-on-demand in instances where there is minimum bandwidth availability. By contrast, the applicant's invention provides stored video-on-demand content previously encoded at different bandwidth levels in both instances where there is appropriate bandwidth availability and minimum bandwidth availability. The applicant's invention is an improvement over the combined prior art references, since video-on-demand content is provided in both instances where appropriate and minimum bandwidth availability exist.

Further, the Hang reference fails to bridge the substantial gap as between the Ravi and Brown references and the applicant's invention. In particular, the Hang reference merely discloses a dynamic channel allocation unit for specifying a bit rate for each video coder in a set of parallel video coders comprising an overall video coder. The dynamic channel allocation unit computes a set of channel sharing factors, i.e., the percentage of the total channel bandwidth to be allocated to a particular video coder. One channel sharing factor is computed for each individual video coder. Individual members of the set of channel sharing factors may be further refined to reflect the prior history of the channel sharing factor for their corresponding coder. (See Hang, Abstract.)

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Nowhere in the Hang reference is there any teaching or suggestion of "providing, in the event of appropriate bandwidth availability, the requested VOD content to the subscriber using stored content encoded in a manner adapted to utilize said appropriate bandwidth, and "providing, in the event of minimum bandwidth availability, the requested VOD content to the subscriber using stored content encoded in a manner adapted to utilize said minimum bandwidth." Even if the three references could somehow be combined, and the applicant submits that the three references may not be operably combined, the references would merely disclose an interactive information distribution system having a dynamic channel allocation unit for providing previously encoded video-on-demand content when there is appropriate bandwidth availability, and providing near video-on-demand content when there is minimum bandwidth availability. As discussed above, the applicant's invention provides video-on-demand content in both instances where there is available bandwidth availability and minimum bandwidth availability. Therefore, the combined references of Brown and Hang also fail to teach the applicant's invention as a whole.

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CONCLUSION

Thus, the Applicant submits that none of the claims, presently in the application, is obvious under the provisions of 35 U.S.C. §103. Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Steven M. Hertzberg or Eamon J. Wall at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

Dated: 9/15/03

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